THE ZIKA VIRUS

August 3, 2016

Sonia G. Pandit, MPH MBA
Chief Executive Officer
The Pandit Group

sonia@thepanditgroup.com
443-990-1372
www.thepanditgroup.com
What Makes Zika Unique?

- Viral disease (Flavi virus)
- Transmission
  - Through the bite of an Aedes species mosquito
  - Sex with an infected partner
  - (Virus can also be transmitted from a pregnant women to her fetus, through blood transfusion, and through laboratory exposure)
- Birth defects including microcephaly
Where Did Zika Come From?

- First discovered in rhesus monkeys in 1947 in Uganda, near the Zika forest
- Subsequently described in humans in 1952 in Uganda and United Republic of Tanzania
- Cases in Africa and Asia during 1950-1970’s
- First outbreak outside of Asia or Africa in 2007 in Yap
- Outbreak in French Polynesia starting in October of 2013
How is Zika Spread?
Estimated Range of Aedes Aegypti and Albopictus

Estimated range of *Aedes aegypti* in the United States, 2016*

Estimated range of *Aedes albopictus* in the United States, 2016*
Aedes Mosquito

- Aegypti and albopictus (Asian Tiger)
- Same mosquitoes that spread dengue and chikungunya
- Container breeders; they lay eggs in and near standing water (i.e. buckets, bowls, animal dishes, flower pots)
- Prefer to bite people below the knees
- Live indoors and outdoors near people
- Aggressive, daytime biters
- Short range
Zika in the World
Zika in the United States

*Florida Department of Health has identified an area in one neighborhood of Miami where Zika is being spread by mosquitoes.
The Zika Virus

- Zika virus infection is generally asymptomatic or mild
- Zika infection during pregnancy can cause serious birth defects
- Zika virus is primarily spread through the bite of an infected mosquito
- Zika virus can also be sexually transmitted
Current Cases in the United States (as of 7/27/16)

- 1,658 lab-confirmed Zika disease cases in the United States (46 states + Washington, D.C.)
  - At least 433 are pregnant women (as of 7/21/16)
  - 13 liveborn infants with birth defects
  - 6 pregnancy losses with birth defects
  - 15 cases were sexually transmitted
  - 5 cases of Guillain-Barre syndrome
Current Cases in Maryland (as of 7/27/16)

- 48 lab-confirmed Zika disease cases in Maryland
  - All cases have been related to travel and sexual transmission
  - No local transmission from Maryland mosquitoes
Zika Infection

- Incubation period: estimated 3-5 days, up to 14 days
- Only about 20% of people infected have symptoms
- Duration of illness: brief, typically ~1 week
- Viremia lasts for ≤1 week
- Illness is generally mild, but could lead to important potential complications
  - Guillain-Barre Syndrome
  - Pregnancy complications, especially microcephaly
### Clinical Presentation

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Zika</th>
<th>Dengue</th>
<th>Chikungunya</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Rash</td>
<td>+++</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>++</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Myalgia</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Headache</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>-</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Shock</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>
Diagnostic Testing

- PCR can detect virus in first week after illness onset
- Serological testing can detect illness for longer but is less specific
  - IgM detectable starting on day 4 after illness onset
  - Significant interactions with other viruses (WNV, YFV, Dengue) making test interpretation sometimes difficult
  - More complex serological tests can be done to help distinguish Zika from other infections; less helpful if previously infected/vaccinated
- Commercial testing now available
Treatment

- No specific medicine or vaccine for Zika virus
- Can treat the symptoms with rest, fluids, acetaminophen for fever and pain
- Avoid aspirin and NSAIDS until dengue is ruled out to avoid hemorrhagic complications
- Likely lifelong immunity after infection
Zika and Pregnancy

- CDC currently recommends the following:
  1. Avoid travel to an area with Zika
  2. Take steps to prevent mosquito bites
  3. Take steps to prevent getting Zika through sex
  4. See a doctor or other healthcare provider

- All pregnant women in the United States should be assessed for possible Zika virus exposure during each prenatal care visit; pregnant women with possible Zika exposure (i.e. through travel to an area with Zika or unprotected sex with a partner that traveled to an area with Zika) and/or signs of symptoms of Zika should be tested for Zika

- No risk to future pregnancies

- Potentially many other Zika-related severe fetal brain defects including eye defects, hearing loss, and impaired growth
# Thinking about Pregnancy?

<table>
<thead>
<tr>
<th>Suggested timeframe to wait before trying to get pregnant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible exposure via recent travel or sex without a condom with a partner infected with Zika</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Zika symptoms</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wait at least 8 weeks after symptoms start</td>
<td>Wait at least 8 weeks after exposure</td>
<td>Wait at least 6 months after symptoms start</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No Zika symptoms</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wait at least 8 weeks after exposure</td>
<td>Wait at least 8 weeks after exposure. Talk with your healthcare provider.</td>
<td></td>
</tr>
</tbody>
</table>
Prevention Measures: Travel

- Avoid travel to areas with Zika
- Check travel notices
- Protect yourself from mosquito bites
- Protect yourself during sex
- See a doctor or healthcare professional
Prevention Measures: Sex

- If you live in or have traveled to an area with Zika, take the following precautions during pregnancy:
  - Use condoms and/or other barriers to protect against infection
  - Consider refraining from sex during pregnancy

- For couples considering getting pregnant or concerned about sexual transmission who have traveled to an area with Zika:
  - Consider using condoms or not having sex for at least 6 months after symptoms begin
  - If there are no symptoms, consider using condoms or not having sex for at least 8 weeks after travel
Prevention Measures: Mosquitoes

- Take steps to prevent mosquito bites
  - Wear long-sleeved shirts and long pants
  - Stay in places with air conditioning and window and door screens to keep mosquitoes outside
  - Use Environmental Protection Agency registered insect repellents (i.e. DEET, picaridin, oil of lemon eucalyptus or para-methane-diol, IR3535)
    - Follow instructions
    - Treat clothing and gear
  - Remove or stay away from mosquito breeding sites, like containers with standing water
ENGAGE & INFORM
For More Information

- Centers for Disease Control and Prevention: [www.cdc.gov](http://www.cdc.gov)
- DHMH Zika Town Hall: [https://youtu.be/1xpcuDHsGK8](https://youtu.be/1xpcuDHsGK8)
- Soundcloud for Zika audio PSAs: [https://soundcloud.com/mdagdept](https://soundcloud.com/mdagdept)
- Mosquito prevention: [https://youtu.be/DmiR8DJjMQM](https://youtu.be/DmiR8DJjMQM)
- Questions? E-mail Zika.Questions@maryland.gov